

CLAIMS

5

1. A substrate processing apparatus comprising:

a processing vessel that defines a processing space therein;

10 a heater portion that heats a substrate introduced into the processing space to a predetermined temperature; and

a holding member that holds the substrate above the heater portion;

15 wherein the heater portion accommodates a heating element contained inside a transparent case made of quartz.

20

2. The substrate processing apparatus as claimed in claim 1, further comprising:

25 a depressurizing part for depressurizing an internal space of the processing vessel and an internal space of the transparent case at the same time.

30

3. The substrate processing apparatus as claimed in claim 1, wherein a SiC heater plate that

- 86 -

is heated by the heating element is provided on a top surface of the transparent case, wherein a top surface of the heater plate is disposed in the vicinity of and opposite to a bottom surface of the substrate held by the holding member.

10 4. The substrate processing apparatus as claimed in claim 1, wherein the heating element provides to the substrate

 a first SiC heating part formed as a circular shape that is concentric with the axis of

15 the holding member, and

 second and third SiC heating parts formed in a manner surrounding an outer periphery of the first heating part,

 wherein the power supply to the first SiC

20 heating part, or to the second and third SiC heating parts, or to both is selectively switched.

25

 5. The substrate processing apparatus as claimed in claim 1, wherein the transparent case is provided on a base, includes a cylinder portion contacting the base and a top plate covering a top

30 surface of the cylinder portion, and is formed in a manner covering an internal space together with the base.

6. The substrate processing apparatus as
5 claimed in claim 1, wherein the holding member
includes a plurality of arm portions that are made of
transparent quartz, the arm portions being arranged
to support a bottom portion of the substrate.

10

7. The substrate processing apparatus as
claimed in claim 3, wherein the heater plate is
15 mounted on the top plate of the transparent case in a
manner facing the bottom portion of the substrate
supported by a plurality of arm portions of the
holding member.

20

8. The substrate processing apparatus as
claimed in claim 1, further comprising:
25 a heat reflecting member provided below the
heating element for upwardly reflecting heat from the
heating element.

30

9. The substrate processing apparatus as
claimed in claim 8, wherein the heat reflecting

- 88 -

member is clamped below the heating element in an opposing state.

5

10. The substrate processing apparatus as claimed in claim 5, wherein the transparent case includes a water channel through which a coolant is
10 supplied along a circumferential direction of the cylinder portion.